

## Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: **Calcium imaging of control (siScramble) endothelial cells.** Left: A confluent monolayer of control HAECs loaded with fluorescent  $\text{Ca}^{2+}$  indicator Oregon Green BAPTA-1 were recorded for changes in fluorescence intensity under laminar flow for 10 minutes. The first 25 seconds were removed due to camera saturation and then compressed to 20 seconds with a frame rate of 30 frames per second, scale bar=20 $\mu\text{m}$ . To remove photobleaching, the fluorescence was corrected with a linear decay model fitted to the averaged pixel intensity. Right: Fluorescence time series of a single cell (marked by red square on left panel). The raw time series without photobleaching correction is displayed in the top panel and the bottom panel plots the calcium concentration calculated by correcting the photobleaching and using  $F_{\text{max}}/F_{\text{min}}$ .

File Name: Supplementary Movie 2

Description: **Calcium imaging of *NOTCH1* KD (si*NOTCH1*) endothelial cells.** Left: A confluent monolayer of *NOTCH1* KD HAECs loaded with fluorescent  $\text{Ca}^{2+}$  indicator Oregon Green BAPTA-1 were recorded for changes in fluorescence intensity under laminar flow for 10 minutes. The first 25 seconds were removed due to camera saturation and then compressed to 20 seconds with a frame rate of 30 frames per second, scale bar=20 $\mu\text{m}$ . To remove photobleaching, the fluorescence was corrected with a linear decay model fitted to the averaged pixel intensity. Right: Fluorescence time series of a single cell (marked by red square on left panel). The raw time series without photobleaching correction is displayed in the top panel. In the bottom panel, the calcium concentration is plotted by correcting the photobleaching and using  $F_{\text{max}}/F_{\text{min}}$ .